

**U.S. Department of Energy  
Technical Qualification Program**

# ***Emergency Management Topical Area***

## **Study Guide**

<p><b>Section 2.0 Regulatory</b></p>
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**May 1996**



**Competency 2.1** Emergency management personnel shall demonstrate an expert level knowledge of the following emergency management related Department of Energy (DOE) Orders:

- DOE Order 5500.1, Emergency Management System
- DOE Order 5500.2, Emergency Categories, Classes, and Notification and Reporting Requirements
- DOE Order 5500.3, Planning and Preparedness for Operational Emergencies
- DOE Order 5500.7, Emergency Operating Records Protection Program
- DOE Order 5500.10, Emergency Readiness Assurance Program

**1. Supporting Knowledge and Skills**

- a. Describe the purpose of the Orders listed above.
- b. Discuss the general roles and responsibilities of the departmental elements for management of the Department's Emergency Management System.
- c. Define “Operational Emergencies” and the circumstances to which they apply.
- d. Discuss the classes of hazards contained in DOE Order 5500.1, Emergency Management System.
- e. Discuss the Department's three-tiered organizational approach to managing Operational Emergencies.
- f. Review and comment on appropriate plans and procedures for timely and accurate determination of emergency class, notification and reporting of emergency events.
- g. Using DOE Order 5500.3, Planning and Preparedness for Operational Emergencies, Section 8, Policy, discuss the stated policy.
- h. Discuss the concept of “commensurate with hazard” stated in DOE Order 5500.3, Planning and Preparedness for Operational Emergencies.



- i. Using the Requirements Section of DOE Order 5500.3, Planning and Preparedness for Operational Emergencies, and the applicable Department of Energy Emergency Management Guide, discuss the purpose and function of each of the following required program elements:
- Emergency response organization
  - Off-site response interfaces
  - Operational Emergency Event Classes
  - Notification
  - Consequence assessment
  - Protective actions
  - Medical support
  - Recovery and reentry
  - Public information
  - Emergency facilities and equipment
  - Training
  - Drills and exercises
  - Program administration
- j. State the purpose of an Emergency Readiness Assurance Plan.

## 2. Self-Study Activities (corresponding to the intent of the above competency)

- NOTES:
- The DOE Orders are in a state of transition. Please refer to the following gopher site for a cross reference of new and old Orders:  
gopher://VM1.HQADMIN.DOE.GOV:70/00/doemenu1/directiv/251cross.asc
  - Below are two web sites containing many of the references you may need.

Web Sites		
Organization	Site Location	Notes
Department of Energy	<a href="http://cted.inel.gov/cted/index.html">http://cted.inel.gov/cted/index.html</a>	DOE Standards, Guides, and Orders.
U.S. House of Representatives	<a href="http://law.house.gov/cfr.htm">http://law.house.gov/cfr.htm</a>	Searchable Code of Federal Regulations

**Read** DOE Order 5500.1, *Emergency Management System*.

**Read** DOE Order 5500.2, *Emergency Categories, Classes, and Notification and Reporting Requirements*.



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**Read** DOE Order 5500.3, *Planning and Preparedness for Operational Emergencies*.

**Read** DOE Order 5500.7, *Emergency Operating Records Protection Program*.

**Read** DOE Order 5500.10, *Emergency Readiness Assurance Program*.

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| EXERCISE 2.1-A | Referring to the Orders listed above, identify the purpose and scope statements.   |
| EXERCISE 2.1-B | Identify the role of the field element in an emergency.  |
| EXERCISE 2.1-C | Describe the organization and function of the Headquarters (HQ) emergency management team (EMT).   |
| EXERCISE 2.1-D | Define the term “operational emergency” and the circumstances to which it applies.   |
| EXERCISE 2.1-E | Describe the membership and function of the Emergency Management Advisory Committee (EMAC).  |
| EXERCISE 2.1-F | The establishment of an emergency operations center (EOC) is found in which DOE Order?   |
| EXERCISE 2.1-G | <p>Describe each of the following DOE response assets and identify the field element responsible for maintaining/deploying each asset:</p> <ul style="list-style-type: none"><li>• Accident Response Group (ARG)</li><li>• Federal Radiological Monitoring and Assessment Center (FRMAC)</li><li>• Radiological Assistance Program (RAP)</li><li>• Radiation Emergency Assistance Center/Training Site (REAC/TS)</li><li>• Nuclear Emergency Search Team (NEST)</li><li>• Aerial Measuring System (AMS)</li><li>• Atmospheric Release Advisory Capability (ARAC)</li></ul> |
| EXERCISE 2.1-H | Describe the function of the DOE Regional Coordinating Offices.  |
| EXERCISE 2.1-I | Describe the approval process for emergency plans and procedures for DOE- or contractor-operated DOE facilities.   |
| EXERCISE 2.1-J | Describe three classes of operational emergencies.   |



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EXERCISE 2.1-K Describe the role of the field element in a general emergency.

EXERCISE 2.1-L Describe the relationship between DOE Orders 5500.2B and 5000.3B.

**Read** DOE Order 5500.3, *Planning and Preparedness for Operational Emergencies*.

EXERCISE 2.1-M Discuss the concept “commensurate with hazard” stated in DOE Order 5500.3A, *Planning and Preparedness for Operational Emergencies*.

EXERCISE 2.1-N Referring to the Requirements section of DOE Order 5500.3A, *Planning and Preparedness for Operational Emergencies*, and the applicable DOE Emergency Management Guide, briefly describe each of the following required program elements:

- Emergency response organization
- Off-site response interfaces
- Operational emergency event classes
- Notification
- Consequence assessment
- Protective actions
- Medical support
- Recovery and reentry
- Public information
- Emergency facilities and equipment
- Training
- Drills and exercises
- Program administration

EXERCISE 2.1-O Discuss the need for DOE Order 5500.7B, *Emergency Operating Records Protection Program*, in light of the existence of DOE Order 1324.8, *Rights and Interests Records Protection Program* (otherwise known as the Vital Records Program).

EXERCISE 2.1-P Using DOE Order 5500.10, describe the role of the field element in the Emergency Readiness Assurance Program.

EXERCISE 2.1-Q Identify the dates for submission of Emergency Readiness Assurance Plans (1) from the contractor to the field element and (2) from the field element to the Program Secretarial Officer.



### 3. Summary

It is the purpose of DOE Orders to establish a framework for the Department's EMS.

DOE Order 5500.1B, *Emergency Management System*, establishes the overall policy and requirements of the EMS. The Order states that the Under Secretary is the senior official for the EMS and convenes the HQ EMT. The HQ EMT is a team formed to manage response actions during emergencies involving DOE facilities or requiring DOE assistance. The EMAC is also established by this Order and supports the Director of Emergency Operations (DEO) in the development of specific policy and technical recommendations. Specific responsibilities are spelled out in this Order for Facility Managers, heads of field elements, and HQ Program Secretarial Officers (Program Senior Officials [PSOs]).

DOE Order 5500.2B, *Emergency Categories, Classes, and Notification and Reporting Requirements*, establishes standard terminology for operational and energy emergencies. Operational emergencies are further classified as an Alert, a Site Area Emergency, or General Emergency according to the severity of the impact of the event. This Order also establishes a reporting requirement for emergency events.

DOE Order 5500.3A, *Planning and Preparedness for Operational Emergencies*, establishes the hazards assessment as the technical basis upon which all emergency management programs are developed. The Order states the requirements for planning and preparedness for operational emergencies and describes the 13 program elements of an emergency management program.

DOE Order 5500.7B, *Emergency Operating Records Protection Program*, establishes policies, responsibilities, and requirements to ensure the safeguarding of the core of records deemed necessary to ensure continuity of governmental activities following disasters and attack-related emergency conditions. The Order provides regulatory guidance on acceptable storage locations, manner of storage, and disposition of emergency operating records.

DOE Order 5500.10, *Emergency Preparedness Assurance Program*, establishes requirements for the Emergency Readiness Assurance Program, the goal of which is to ensure that the EMS is ready to respond promptly, efficiently, and effectively to any emergency involving DOE facilities or requiring DOE assistance. The program includes a requirement for development of a five-year ERAP. The Order requires an appraisal program to ensure that stated emergency capabilities are sufficient to implement emergency plans and that appropriate and timely improvements are made.

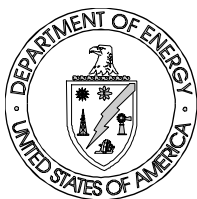


#### 4. Exercise Solutions

EXERCISE 2.1-A Referring to the Orders listed above, identify the purpose and scope statements.

ANSWER 2.1-A

Purpose and Scope of Selected DOE Orders Related to Emergency Management		
Order	Purpose	Scope
<b>5500.1B</b> <i>Emergency Management System</i>	To establish overall policy and requirements for the Department of Energy (DOE) Emergency Management System (EMS). The EMS provides the framework for development, coordination, and direction of planning, preparedness, and readiness assurance activities. This Order addresses responses to Operational, Energy, and Continuity of Government (COG) Emergencies involving DOE or requiring DOE assistance.	The provisions of this Order apply to all DOE Elements and contractors performing work for DOE as provided for by law and/or contract and as implemented by the appropriate contracting officer.
<b>5500.2B</b> <i>Emergency Categories, Classes, and Notification and Reporting Requirements</i>	To establish Department of Energy (DOE) emergency categories, classes, and notification and reporting requirements to facilitate the communication and reporting of emergency events.	The provisions of this Order apply to all DOE Elements and contractors performing work for DOE as provided for by law and/or contract and as implemented by the appropriate contracting officer.
<b>5500.3A</b> <i>Planning and Preparedness for Operational Emergencies</i>	To establish requirements for planning and preparedness for Operational Emergencies involving the Department of Energy (DOE) or requiring DOE assistance.	The provisions of this Order apply to all DOE Elements and contractors performing work for DOE as provided for by law and/or contract and as implemented by the appropriate contracting officer.



Purpose and Scope of Selected DOE Orders Related to Emergency Management		
Order	Purpose	Scope
<b>5500.7B</b> <i>Emergency Operating Records Protection Program</i>	To establish the policy, responsibilities, and requirements for a Departmental Emergency Operating Records Protection Program to safeguard that core of records deemed necessary to assure continuity of essential Governmental activities during and following disaster and attack-related emergency conditions.	The provisions of this Order apply to all Departmental elements and to covered contractors to the extent implemented under a contract or other agreement. A covered contractor is a seller of supplies or services involving the management of an emergency operations center under a management and operating contract or subcontracts thereunder.
<b>5500.10</b> <i>Emergency Readiness Assurance Program</i>	To establish the requirements of the Emergency Readiness Assurance Program with a goal of assuring that the Department of Energy (DOE) Emergency Management System (EMS) is ready to respond promptly, efficiently, and effectively to any emergency involving DOE facilities or requiring DOE assistance.	The provisions of this Order apply to all DOE Elements and contractors performing work for DOE as provided for by law and/or contract and as implemented by the appropriate contracting officer.

EXERCISE 2.1-B Identify the role of the field element in an operational emergency.

ANSWER 2.1-B During an operational emergency, the cognizant field element is responsible for the following:

1. Ensuring prompt initial notification to state, tribal, and local governments and others, as appropriate
2. Ensuring proper response by Facility Managers to any emergency within their facilities
3. Providing additional technical assistance and support
4. Monitoring the facility response activities and recommending additional actions, as necessary
5. Predesignating an On-Scene Coordinator for Federal responses under the National Contingency Plan (NCP)
6. Ensuring emergency response actions are coordinated with the cognizant local, state, tribal, and Federal regional organizations





7. Coordinating additional DOE and other Federal agency resources, as required
8. Overseeing the local investigation and closeout of the occurrence, in accordance with the HQ Program Manager

EXERCISE 2.1-C      Describe the organization and function of the EMT at the HQ level.

ANSWER 2.1-C      The HQ EMT consists of an executive team and a technical operations cadre. The executive team provides strategic direction to the response and evaluates the broad impacts of the emergency on the DOE complex. The executive team is normally chaired by the Under Secretary, with the cognizant PSO serving as the Deputy Chair.

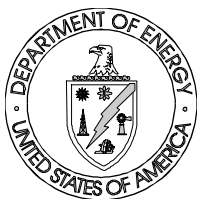
The technical operations cadre, which consists of several designated PSOs for nuclear and nonnuclear programs, provides oversight to the field element; coordinates with other Federal agencies; and provides information to the press, Congress, and other Federal agencies.

EXERCISE 2.1-D      Define the term “operational emergency.”

ANSWER 2.1-D      Operational emergencies are significant accidents, incidents, events, or natural phenomena that seriously degrade the safety or security of DOE facilities. Operational emergencies apply to DOE reactors and other DOE facilities (nuclear and nonnuclear) involved with hazardous materials; DOE-controlled nuclear weapons, components, or test devices; DOE safeguards and security events; and transportation accidents involving hazardous materials.

EXERCISE 2.1-E      Describe the membership and the function of the EMAC.

ANSWER 2.1-E      The EMAC, chaired by the DEO, consists of individuals with emergency preparedness responsibilities, appointed by and representing the cognizant HQ PSOs and heads of field elements.



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The functions of the EMAC are to assist the DEO in the identification of problem areas related to the DOE EMS, provide recommended solutions to such problems, and assist with the development of policy and technical recommendations to enhance and implement the DOE emergency preparedness program.

EXERCISE 2.1-F      The requirement for establishment of EOCs is found in which DOE Order?

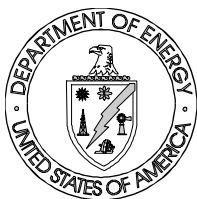
ANSWER 2.1-F      The requirement for the establishment of EOCs is found in DOE Order 5500.3A, Section 11c(10) subsection (a) and (b).

EXERCISE 2.1-G      Describe each of the following DOE response assets and identify the field element responsible for maintaining/deploying each asset:

- ARG
- FRMAC
- RAP
- REAC/TS
- NEST
- AMS
- ARAC

ANSWER 2.1-G

DOE Emergency Response Assets		
Asset	Description	Responsible Field Element
Accident Response Group (ARG)	Primary accident response element for events or accidents involving nuclear weapons.	Albuquerque Operations Office
Federal Radiological Monitoring and Assessment Center (FRMAC)	Center established for production of compiled, quality-controlled monitoring and assessment data for the lead Federal agency and the state, tribal, or local authorities involved in a radiological event.	Nevada Operations Office

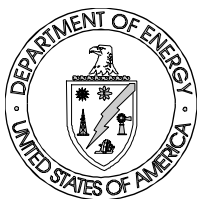


DOE Emergency Response Assets		
Asset	Description	Responsible Field Element
Radiological Assistance Program (RAP)	Provides radiological assistance to other Federal agencies, state, tribal, and local governments, and nuclear regulatory licensees requesting assistance for events involving radioactive materials.	Appropriate Regional Coordinating Offices
Radiation Emergency Assistance Center/Training Site (REAC/TS)	Provides 24-hour direct or consultative assistance regarding medical and health physics problems associated with radiation accidents.	Oak Ridge Operations Office
Nuclear Emergency Search Team (NEST)	Provides technical assistance to the Federal Bureau of Investigation, including locating nuclear or explosive materials or devices that may be lost, stolen, or associated with bomb threats.	Nevada Operations Office
Aerial Measuring System (AMS)	Measures extremely low levels of gamma radiation and locates and tracks airborne radiation. This system also includes aerial photography and multispectral scanning capabilities.	Nevada Operations Office
Atmospheric Release Advisory Capability (ARAC)	Computer-based emergency response and preparedness system that provides rapid predictions of the transport, diffusion, and deposition of radionuclides or other toxic materials released into the atmosphere and dose projections to people and the environment.	Oakland Operations Office

EXERCISE 2.1-H List the DOE Regional Coordinating Offices and describe their function.

ANSWER 2.1-H Regional Coordinating Offices include the following:

- Operations Offices at Oak Ridge
- Savannah River
- Albuquerque
- Chicago



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- Idaho
- Richland
- Oakland
- Brookhaven Area Office

The function of the Regional Coordinating Offices is to provide assistance and support within their assigned regions as required under the Radiological Assistance Program in coordination with and based on guidance from DP-1.

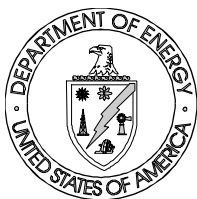
**EXERCISE 2.1-I** Describe the approval process for emergency plans and procedures for DOE or contractor-operated DOE facilities.

**ANSWER 2.1-I** Emergency plans and procedures are developed at the facility/site level by the managing contractor with approval from the cognizant field element and PSO.

**EXERCISE 2.1-J** Describe three classes of operational emergencies.

**ANSWER 2.1-J**

The Three Classes of Operational Emergencies	
Class	Description
Alert	An Alert represents an event in progress or having occurred that involves an actual or potential substantial reduction in the level of facility safety and protection. Any environmental releases of hazardous materials are expected to be limited to small fractions of the appropriate Protective Action Guidelines (PAGs) or Emergency Response Planning Guidelines (ERPGs) on site.
Site Area Emergency	A Site Area Emergency represents an event that is in progress or has occurred involving actual or likely major failure(s) of facility safety or safeguards systems needed for the protection of on-site personnel, public health and safety, the environment, or national security. Any environmental releases of hazardous materials are not expected to exceed the appropriate PAGs off site.



The Three Classes of Operational Emergencies	
Class	Description
General Emergency	A General Emergency represents an event that is in progress or has occurred involving actual or imminent catastrophic failure of facility safety systems with potential for loss of confinement integrity of a weapon or test device, which could lead to substantial off-site impacts. Any release of hazardous materials can reasonably be expected to exceed the appropriate PAGs off site.

EXERCISE 2.1-K      Describe the activities associated with declaration of an operational General Emergency.

ANSWER 2.1-K      Declaration of a General Emergency requires the notification, mobilization, and dispatch of all appropriate emergency response personnel and equipment, including appropriate DOE national response assets to do the following:

1. Activate the response centers and other emergency assets to provide continuous assessment of information
2. Establish communication, consultation, and liaison with off-site authorities and recommend predetermined protective actions for the public
3. Provide information to the public through off-site authorities and the media
4. Conduct or assist evacuations and sheltering
5. Conduct appropriate assessments, investigations, or sampling and monitoring
6. Mitigate the severity of the actual or potential consequences
7. Mobilize and dispatch appropriate response groups or security forces

EXERCISE 2.1-L      Describe the relationship between DOE Orders 5500.2B and 5000.3B.

ANSWER 2.1-L      DOE Order 5000.3B provides requirements for reporting event occurrences. Reportable events are categorized as Off-Normal, Unusual Events, and Emergencies. Once an event has been determined to be an Emergency, it is further classified as to Alert, Site Area, or General Emergency by 5500.2B.



EXERCISE 2.1-M     Discuss the concept “commensurate with hazard” stated in DOE Order 5500.3A, *Planning and Preparedness for Operational Emergencies*.

ANSWER 2.1-M     “Commensurate with hazard” provides a mechanism for a graded approach to planning, preparedness, and response. Planning and preparedness activities should reflect the severity of hazards associated with a facility/site. Emergency preparedness programs for low-hazard facilities should be appropriate for the low hazards on site. A high-hazard facility would require a greater level of planning and preparedness.

EXERCISE 2.1-N     Referring to the Requirements section of DOE Order 5500.3A, *Planning and Preparedness for Operational Emergencies*, and the applicable DOE Emergency Management Guide, briefly describe each of the following required program elements:

- Emergency response organization
- Off-site response interfaces
- Operational emergency event classes
- Notification
- Consequence assessment
- Protective actions
- Medical support
- Recovery and reentry
- Public information
- Emergency facilities and equipment
- Training
- Drills and exercises
- Program administration



ANSWER 2.1-N

Required Emergency Preparedness Program Elements	
Program Element	Description
Emergency response organization	Has overall responsibility for the initial and ongoing response to, and mitigation of, an emergency.
Off-site response interfaces	Provisions for interface and coordination with Federal, state, tribal, and local agencies and organizations responsible for off-site emergency response and for protection of the environment and the health and safety of the public.
Operational emergency event classes	Alert, Site Area, and General Emergency classes indicate the level of severity of an emergency event.
Notification	Provisions for notification and communication of emergency information (must be consistent with the requirements of DOE Orders 5000.3B and 5500.2B).
Consequence assessment	Provisions to adequately assess the actual or potential on-site and off-site consequences of an emergency.
Protective actions	Specific, predetermined actions to be taken in response to emergency conditions to protect on-site personnel and the public.
Medical support	Medical support for workers, including those with radiological and/or hazardous materials contamination.
Recovery and reentry	Plans and procedures for recovery from an operational emergency and reentry into the affected facility.
Public information	To ensure timely release of accurate information regarding an emergency to the news media and the coordination of this information within DOE and with other Federal, state, tribal, and local response organizations.
Emergency facilities and equipment	An EOC from which the emergency response organization assesses, evaluates, coordinates, and directs emergency response activities and communicates within DOE and with other Federal, state, tribal, and local response organizations. This program element also includes additional facilities, commensurate with the scope and characteristics of response activities.



Required Emergency Preparedness Program Elements	
Program Element	Description
Training	The purpose of a training program is to ensure training is provided to all workers regarding operational emergencies, and specialized training is conducted for all members of the response organization. Facility-specific training and information on hazards and emergency response must also be provided to off-site state, tribal, and local emergency response organizations.
Drills and exercises	Drills and exercises are used to develop, maintain, test and evaluate personnel skills, expertise, and response capability.
Program administration	Ensures the development and maintenance of the emergency plan, the ERAP and annual updates, development and conduct of training and exercise programs, coordination of assessment activities, development of related documentation, and coordination of emergency response.

EXERCISE 2.1-O Discuss the need for DOE Order 5500.7B, *Emergency Operating Records Protection Program*, in light of the existence of DOE Order 1324.8, *Rights and Interests Records Protection Program* (otherwise known as the Vital Records Program).

ANSWER 2.1-O DOE Order 5500.7B specifically addresses the protection of operating records necessary to maintain operations in the event of a disaster or attack-related emergency that threatens the continuity of government operations.

EXERCISE 2.1-P Using DOE Order 5500.10, describe the role of the field element in the Emergency Readiness Assurance Program.

ANSWER 2.1-P Heads of field elements are responsible for the following:

1. Review and approval of ERAPs and updates from subordinate elements
2. Consolidate ERAPs and annual updates and submit them to the appropriate PSO for final approval
3. Provide the resources required to implement field element emergency readiness assurance activities in accordance with approved ERAPs





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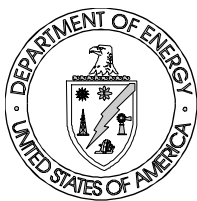
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4. Monitor and evaluate emergency readiness assurance capabilities within their areas of responsibility, including safeguards and security issues; conduct field performance reviews and assessments to ensure that contractor emergency readiness programs are valid
5. Review contractor compliance with appropriate DOE requirements, legislation, and implementing regulations
6. Act as the Federal On Scene Coordinator for contractor response under the National Oil and Hazardous Substances Pollution Contingency Plan
7. Ensure that the Manager/Administrator of each DOE- or contractor-operated facility does the following:
  - a) Performs internal EMS readiness assurance assessments of the facility
  - b) Prepares the ERAPs and annual updates required by DOE Order 5500.10

**EXERCISE 2.1-Q** Identify the dates for submission of ERAPs (1) from the contractor to the field element, and (2) from the field element to the Program Secretarial Officer.

**ANSWER 2.1-Q**

1. Facility ERAPs are due to the field element by September 30.
2. Consolidated field element ERAPs are due to the PSO by October 31.



**Competency 2.2** Emergency management personnel shall demonstrate a working level knowledge of Department of Energy (DOE) Order 5500.4, Public Affairs Policy and Planning Requirements for Emergencies.

**1. Supporting Knowledge and Skills**

- a. Describe the major requirements and purpose of DOE Order 5500.4, Public Affairs Policy and Planning Requirements for Emergencies.
- b. Discuss the records requiring protection and the rationale associated with protecting these records.
- c. Discuss the Department's public affairs policy with respect to emergencies.
- d. Discuss the roles and responsibilities of the various Departmental elements in interfacing with the public and media in the event of an emergency.
- e. Describe the roles and responsibilities of Departmental senior officials and emergency management personnel in emergency or crisis situations.
- f. Discuss the transmittal requirements for emergency plans.

**2. Self-Study Activities (corresponding to the intent of the above competency)**

- NOTES:
- The DOE Orders are in a state of transition. Please refer to the following gopher site for a cross reference of new and old Orders:  
gopher://VM1.HQADMIN.DOE.GOV:70/00/doemenu1/directiv/251cross.asc
  - Below are two web sites containing many of the references you may need.

Web Sites		
Organization	Site Location	Notes
Department of Energy	<a href="http://cted.inel.gov/cted/index.html">http://cted.inel.gov/cted/index.html</a>	DOE Standards, Guides, and Orders.
U.S. House of Representatives	<a href="http://law.house.gov/cfr.htm">http://law.house.gov/cfr.htm</a>	Searchable Code of Federal Regulations



**Read** DOE Order 5500.4A, *Public Affairs Policy and Planning Requirements for Emergencies*, and the attachments.

**Read** the DOE Emergency Management Guide *Public Affairs*.

- EXERCISE 2.2-A      Describe the purpose of DOE Order 5500.4A, *Public Affairs Policy and Planning Requirements for Emergencies*.
- EXERCISE 2.2-B      What is the Department's public affairs policy with respect to emergencies?
- EXERCISE 2.2-C      Discuss the role and responsibility of the heads of field organizations in interfacing with the public and media in the event of an emergency.
- EXERCISE 2.2-D      What are the transmittal requirements for Emergency Public Information Plans?

### 3. Summary

"GENERAL. This Order covers emergency situations involving an actual, potential, or perceived threat to onsite personnel, public health and safety, and/or to the environment. . . Emergencies affecting the supply of energy resources are covered by a separate order. The handling of the public affairs aspects associated with accidents or incidents involving nuclear weapons, related materials, or components, within DOE, or where DOE acts in a support role to the Department of Defense, requires additional guidance as provided in Attachment 2" (DOE Order 5500.4A).

It is DOE's policy to provide accurate and timely information to the media and public by the most expeditious means in situations involving the Department's response to any emergency that may affect on-site personnel, public health and safety, and the environment. Generally, DOE operates under an open information policy, including the Freedom of Information Act and the Privacy Act, with respect to the release of accident or other emergency information. There are established DOE information policies that describe the specifics. Exceptions are made in the case of the release of information classified for national security purposes or otherwise legally prohibited from release. DOE has responsibility for public affairs actions taken in emergencies at DOE facilities and will coordinate them with other agencies when appropriate.

The Order details the responsibilities and authorities from the Secretarial level to the heads of field organizations.



#### 4. Exercise Solutions

EXERCISE 2.2-A Describe the purpose of DOE Order 5500.4A, *Public Affairs Policy and Planning Requirements for Emergencies*.

ANSWER 2.2-A “PURPOSE. To establish requirements for Department of Energy (DOE) public affairs actions for emergency situations, and to provide guidelines for each Departmental organization or facility to develop a public information plan that will ensure that necessary public affairs actions are planned, coordinated, and taken as an integral part of the total emergency response effort” (DOE Order 5500.4A, Section 1).

EXERCISE 2.2-B What is the Department’s public affairs policy with respect to emergencies?

ANSWER 2.2-B It is DOE’s policy to provide accurate and timely information to the media and public by the most expeditious means in situations involving the Department’s response to any emergency that may affect on-site personnel, public health and safety, and the environment. DOE has assumed responsibility for public affairs actions taken in emergencies at DOE facilities and will coordinate them with other agencies when appropriate.

EXERCISE 2.2-C Discuss the role and responsibility of the heads of field organizations in interfacing with the public and media in the event of an emergency.

ANSWER 2.2-C The heads of field organizations have five primary responsibilities defined in the Order. They are as follows:

- To develop and submit for approval public affairs plans for emergencies for areas under their jurisdiction
- To determine local requirements and take necessary actions when prior communication with Headquarters is not practical
- To provide resources sufficient to implement the emergency public affairs plan
- To ensure that the planning information is periodically disseminated to state and local planning offices
- To ensure that meetings are held at least annually with state and local emergency planning public affairs officials



**EXERCISE 2.2-D**      What are the transmittal requirements for Emergency Public Information Plans?

**ANSWER 2.2-D**      Plans must be submitted to the Assistant Secretary for Congressional, Intergovernmental and Public Affairs (CP-1) for concurrence, and a controlled copy must be submitted to the HQ EOC. Emergency planning information must also be periodically disseminated to state and local planning offices. The Order does not specifically state that the full plan must be provided, but it does require the provision of the educational background information, on specific hazards, availability of additional information and protective measures.



**Competency 2.3 Emergency management personnel shall demonstrate a working-level knowledge of the capabilities of the Department of Energy National Response Assets.**

**1. Supporting Knowledge and Skills**

- a. Discuss the specific responsibilities of the Regional Coordinating Office associated with the Radiological Assistance Program (DOE Order 5530.3 [Old section 2.1.c.]).
- b. Discuss the functions, capabilities, and limitations of the Accident Response Group (DOE Order 5530.1A).
- c. Describe the capabilities, limitations, and responsibilities of the Nuclear Emergency Search Team (DOE Order 5530.2).
- d. Discuss the purpose, activation method, and capabilities of the Radiological Assistance Teams (DOE Order 5530.3).
- e. Describe the capabilities, limitations, and response times of the Aerial Measuring System (DOE Order 5530.4).
- f. Discuss the function, responsibilities, response times, and logistical needs of the Federal Radiological Monitoring and Assessment Center (DOE Order 5530.5).
- g. Describe the functions, major input parameters, and response times of the Atmospheric Release Advisory Capability.
- h. Discuss the functions and capabilities of the Radiological Emergency Assistance Center/Training Site.

**2. Self-Study Activities (corresponding to the intent of the above competency)**

NOTES: • The DOE Orders are in a state of transition. Please refer to the following gopher site for a cross reference of new and old Orders:  
gopher://VM1.HQADMIN.DOE.GOV:70/00/doemenu1/directiv/251cross.asc



## Section 2.0

- Below are two web sites containing many of the references you may need.

Web Sites		
Organization	Site Location	Notes
Department of Energy	<a href="http://cted.inel.gov/cted/index.html">http://cted.inel.gov/cted/index.html</a>	DOE Standards, Guides, and Orders.
U.S. House of Representatives	<a href="http://law.house.gov/cfr.htm">http://law.house.gov/cfr.htm</a>	Searchable Code of Federal Regulations

**Read** DOE Order 5530.3, *Radiological Assistance Program*, Section 7, “Concept of Operations.”

EXERCISE 2.3-A      Discuss the specific responsibilities of the Regional Coordinating Office (RCO) associated with the Radiological Assistance Program.

**Read** DOE Order 5530.1A, *Accident Response Group*, Section 7, pages 3 through 5.

EXERCISE 2.3-B      Discuss the functions, capabilities, and limitations of the Accident Response Group (ARG).

**Read** DOE Order 5530.2, *Nuclear Emergency Search Team*, Section 6. "Concept of Operations."

EXERCISE 2.3-C      Who is the single point of contact for all DOE operational elements at the incident site?

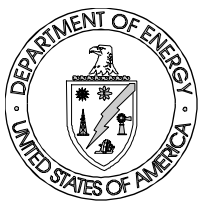
EXERCISE 2.3-D      Who is responsible for the headquarters EM team?

**Read** DOE Order 5530.3. *Radiological Assistance Programs*, Section 7. “Concept of Operations.”

EXERCISE 2.3-E      Where are requests from off-site organizations for radiological assistance normally directed?

**Read** DOE Order 5530.3. *Radiological Assistance Programs*, Section 9. “Administrative Guidelines and Considerations.”

EXERCISE 2.3-F      When is DOE's radiological assistance terminated when providing assistance to state, local, tribal, or commercial authorities?



## Section 2.0

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**Read** DOE Order 5530.3, *Radiological Assistance Programs*, Section 9.h, “Limitations on Assistance.”

EXERCISE 2.3-G      When is DOE Radiological Assistance Program (RAP) assistance NOT going to be utilized?

**Read** DOE Order 5530.4, *Aerial Measuring System*.

EXERCISE 2.3-H      What is the lead time for requests for planned surveys?

EXERCISE 2.3-I      Who has oversight for the Aerial Measuring System, and what are the responsibility areas?

**Read** *Federal Radiological Monitoring and Assessment Center*, Section 4, “Policy.”

EXERCISE 2.3-J      What is the intent of the policy of the Department?

**Read** *Federal Radiological Monitoring and Assessment Center*, Section 7, “Concept of Operations.”

EXERCISE 2.3-K      For what magnitude of radiological incidents does FRMAC provide assistance?

EXERCISE 2.3-L      To whom are the initial requests for assistance from outside the DOE complex submitted?

**Read** DOE Order 5500.1B, *Emergency Management System*, Sections 9.c(2)(f) and 10.aa.

EXERCISE 2.3-M      HQ programmatic responsibility for DOE's radiological emergency response assets, including the Atmospheric Release Advisory Capability, is assigned to whom?

EXERCISE 2.3-N      What Operations Office is assigned responsibility for managing and maintaining the ARAC?

**Read** DOE Order 5500.1B, *Emergency Management System*, Section 10, “Responsibilities and Authority,” Item z.





**Read** DOE Order 5500.1B, *Emergency Management System*, Attachment 2.

**EXERCISE 2.3-O**     What are the functions of the Radiological Emergency Assistance Center/Training Site (REAC/TS)?

**EXERCISE 2.3-P**     What Operations Office is responsible for maintaining the REAC/TS?

### **3. Summary**

The DOE National Response Assets are various response programs to respond to both radiological and nonradiological events around the country and the world. Although primarily developed to respond to DOE emergencies, they can and do respond to emergencies of other Federal agencies and state, local, and tribal government authorities. The responsibilities and authority for each of the assets are broken into the individual Orders in the 5530.X series.

### **4. Exercise Solutions**

**EXERCISE 2.3-A**     Discuss the specific responsibilities of the RCO associated with the Radiological Assistance Program.

**ANSWER 2.3-A**     The RCO will respond to requests for assistance and dispatch, if necessary, a Radiological Assistance Team. The RCO may request that other agencies with available radiological resources also provide assistance. DOE involvement in minor radiological accidents will normally end when the need for assistance is over or when there are other sufficient available resources to handle the situation.

**EXERCISE 2.3-B**     Discuss the functions, capabilities, and limitations of the ARG.

**ANSWER 2.3-B**     The ARG supports the Team Leader (TL)/Energy Senior Official (ESO) in weapon recovery operations and in evaluating, collecting, handling, and mitigating radioactive and other weapons-associated hazards. The ARG will work closely with the military Explosive Ordinance Disposal (EOD) Team to render safe the nuclear weapons/components. When the weapons recovery is completed, the primary mission of the ARG has been accomplished.



## *Section 2.0*

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EXERCISE 2.3-C      Who is the single point of contact for all DOE operational Elements at the incident site?

ANSWER 2.3-C      The TL/ESO.

EXERCISE 2.3-D      Who is responsible for the headquarters EM team?

ANSWER 2.3-D      The Undersecretary chairs the executive team and the technical operations cadre.

EXERCISE 2.3-E      Where are requests from off-site organizations for radiological assistance normally directed?

ANSWER 2.3-E      To one of eight DOE RCOs.

EXERCISE 2.3-F      When is DOE's radiological assistance terminated when providing assistance to state, local, tribal, or commercial authorities?

ANSWER 2.3-F      DOE's radiological assistance will be terminated when it is no longer needed or the necessary assistance is available from state, local, tribal, or commercial authorities.

EXERCISE 2.3-G      When is DOE RAP assistance NOT going to be utilized?

ANSWER 2.3-G      For nonradiological emergencies.

EXERCISE 2.3-H      What is the lead time for requests for planned surveys?

ANSWER 2.3-H      Requests for planned surveys must be submitted at least six months in advance to the Manager, DOE Operations Office, Nevada.



## Section 2.0

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EXERCISE 2.3-I      Who has oversight for the Aerial Measuring System, and what are the responsibility areas?

ANSWER 2.3-I      The Assistant Secretary for Environment, Safety, and Health (EM-1) shall conduct oversight of environmental protection, radiation safety, worker safety, and those aspects of public health and safety that deal with epidemiology and exposure to hazardous materials.

EXERCISE 2.3-J      What is the intent of the policy of the Department?

ANSWER 2.3-J      To establish and maintain plans and procedures for providing DOE resources and support in response to requests for radiological emergency assistance and maintain the capability for coordinating the radiological monitoring and assessment activities for other Federal agencies, as well as to assist State, local, and tribal jurisdictions in preparing for and responding to radiological emergencies.

EXERCISE 2.3-K      For what magnitude of radiological incidents does FRMAC provide assistance?

ANSWER 2.3-K      Major radiological incidents.

EXERCISE 2.3-L      To whom are the initial requests from outside the DOE complex for assistance submitted?

ANSWER 2.3-L      Initial requests for assistance from outside the DOE complex could be directed to any of the Department's sites or directly to the HQ EOC.

EXERCISE 2.3-M      HQ programmatic responsibility for DOE's radiological emergency response assets, including the Atmospheric Release Advisory Capability, is assigned to whom?

ANSWER 2.3-M      The Assistant Secretary for Defense Programs (DP-1).



## *Section 2.0*

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EXERCISE 2.3-N      What Operations Office is assigned responsibility for managing and maintaining the ARAC?

ANSWER 2.3-N      The San Francisco Operations Office.

EXERCISE 2.3-O      What are the functions of REAC/TS?

ANSWER 2.3-O      REAC/TS is a multipurpose medical facility that is prepared to deal with all types of radiation exposure emergencies and provide medical and health physics advice and assistance in radiological emergencies.

EXERCISE 2.3-P      What Operations Office is responsible for maintaining the REAC/TS?

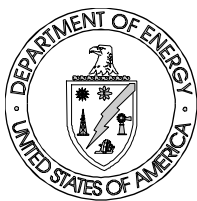
ANSWER 2.3-P      The Oak Ridge Operations Office.



**Competency 2.4** Emergency management personnel shall demonstrate an expert level knowledge of the notification and event classification requirements in Department of Energy (DOE) Order 5500.2, Emergency Categories, Classes, and Notification and Reporting Requirements.

**1. Supporting Knowledge and Skills**

- a. Define the categories and classes of emergency events as stated in DOE Order 5500.2, Emergency Categories, Classes, and Notification and Reporting Requirements.
- b. Define and discuss the notification requirements in DOE Order 5500.2, Emergency Categories, Classes, and Notification and Reporting Requirements, for the reporting of emergency events. Include in this discussion how these requirements differ from the reporting requirements in DOE Order 5000.3, Occurrence Reporting and Processing of Operations Information.
- c. Discuss the maximum time frame to make notifications (initial and follow-up) to off-facility (HQ, State, local, etc.) agencies after an emergency has been declared as identified in DOE Orders 5000.3, Occurrence Reporting and Processing of Operations Information, 5500.1, Emergency Management System, and 5500.2, Emergency Categories, Classes, and Notification and Reporting Requirements. Include in this discussion a description of the priorities for making these notifications.
- d. Discuss the reasons for making initial and follow-up notifications to off-site agencies as directed in DOE Order 5000.3, Occurrence Reporting and Processing of Operations Information, and DOE Order 5500.2, Emergency Categories, Classes, and Notification and Reporting Requirements.
- e. Compare the Department's notification requirements contained in DOE Order 5500.2, Emergency Categories, Classes, and Notification and Reporting Requirements, with those contained in the Resource Conservation and Recovery Act, Clean Water Act, Clean Air Act, Comprehensive Environmental Response, Compensation and Liability Act, Hazardous Material Transportation Uniform Safety Act, and the Emergency Planning and Community Right to Know Act.



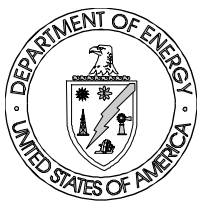
## 2. Self-Study Activities (corresponding to the intent of the above competency)

- NOTES:
- The DOE Orders are in a state of transition. Please refer to the following gopher site for a cross reference of new and old Orders:  
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U.S. House of Representatives	<a href="http://law.house.gov/cfr.htm">http://law.house.gov/cfr.htm</a>	Searchable Code of Federal Regulations

**Read** DOE Order 5000.3B, *Occurrence Reporting and Processing of Operations Information*; DOE Order 5500.2B, *Emergency Categories, Classes, and Notification and Reporting Requirements*; and the DOE Emergency Management Guide *Guidance for Event Classification and Emergency Action Levels*, pages 1 through 9.

- EXERCISE 2.4-A      State in your own words DOE’s policy regarding the categorization and reporting of event occurrences.
- EXERCISE 2.4-B      In your own words, define the “operational” and “energy” categories of emergency events that can affect or involve DOE.
- EXERCISE 2.4-C      What are DOE’s categories for less severe events, in what regulation are these addressed, and what are the notification requirements for both?
- EXERCISE 2.4-D      Identify the three classes of operational emergencies and describe each in terms of potential release of hazardous material at a nonreactor nuclear facility.
- EXERCISE 2.4-E      What are the requirements for oral and written notification by the site/facility to DOE for emergencies? Which documents state these requirements? Which Order’s requirements takes precedence?



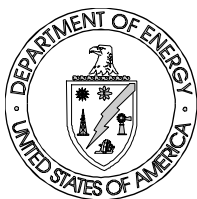
- EXERCISE 2.4-F      What are the requirements for oral and written notification by the site/facility to off-site agencies (regional, Federal, state, tribal, and local) for emergencies? Which documents state these requirements? Which Order's requirements takes precedence?
- EXERCISE 2.4-G      How is support from national response organizations elicited?
- EXERCISE 2.4-H      What are the circumstances under which follow-up (emergency) notification to DOE is required of the facility/site?
- EXERCISE 2.4-I      What are the typical contents of the written reports of the emergency that are submitted to DOE?
- EXERCISE 2.4-J      (a) Compare the notification requirements for a Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)-reportable release with those requirements of a DOE emergency; and (b) determine which would take precedence in a DOE emergency involving a spill or release of a CERCLA-reportable hazard.

### **3. Summary**

Review DOE Order 5000.3B, *Occurrence Reporting and Processing of Operations Information*; DOE Order 5500.2B, *Emergency Categories, Classes, and Notification and Reporting Requirements*; and the DOE Emergency Management Guide *Guidance for Event Classification and Emergency Action Levels*, pages 1 through 9.

### **4. Exercise Solutions**

- EXERCISE 2.4-A      State in your own words DOE's policy regarding the categorization and reporting of event occurrences.
- ANSWER 2.4-A      It's DOE's policy to (a) categorize and make notifications for all occurrences in accordance with DOE Order 5000.3A, and for emergencies, (b) to make the appropriate notifications and (c) to monitor the event for reclassification as necessary.



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**EXERCISE 2.4-B** In your own words, define the “operational” and “energy” categories of emergency events that can affect or involve DOE.

**ANSWER 2.4-B** Operational - Significant accidents, incidents, events, or natural phenomena that seriously degrade the safety or security of DOE facilities.

Energy - A condition or a potential condition affecting the supply of energy or the energy infrastructure with significant potential impact on the national economy or security, defense preparedness, and/or health and safety.

**EXERCISE 2.4-C** What are DOE’s categories for less severe events, in what regulation are these addressed, and what are the notification requirements for both?

**ANSWER 2.4-C** The categories for less severe events, which are addressed in DOE Order 5000.3A, are Unusual Occurrence and Off-Normal. In the Unusual Occurrence, DOE is notified within two hours of categorization; in the Off-Normal event, DOE is notified in writing before the close of the next business day from the time of categorization (not to exceed 80 hours).

**EXERCISE 2.4-D** Identify the three classes of operational emergencies and describe each in terms of potential release of hazardous material at a nonreactor nuclear facility.

**ANSWER 2.4-D**

The Three Classes of Operational Emergencies	
Class	Description*
Alert	Any release of hazardous material (rad or non-rad) expected to be limited to small fractions of the PAG or ERPG exposure levels.
Site Area Emergency	Any release of hazardous material (rad or non-rad) expected to exceed the PAG or ERPG exposure levels on site, but not expected to exceed the PAG or ERPG levels off site.
General Emergency	Any release of hazardous material (rad or non-rad) that can reasonably be expected to exceed the PAG or ERPG exposure levels off site.

\*In terms of potential release of hazardous material at a nonreactor nuclear facility





EXERCISE 2.4-E      What are the requirements for oral and written notification by the site/facility to DOE for emergencies? Which documents state these requirements? Which Order's requirements takes precedence?

ANSWER 2.4-E      From DOE 5500.2B: To DOE HQ EOC within 15 minutes of categorization and in writing within 24 hours.  
From DOE 5000.3B: To DOE within 15 minutes of categorization and in writing within 80 hours.

DOE Order 5500.2B takes precedence. Consult your local SME for further interpretation.

EXERCISE 2.4-F      What are the requirements for oral and written notification by the site/facility to off-site agencies (regional, Federal, state, tribal, and local) for emergencies? Which documents state these requirements? Which Order's requirements takes precedence?

ANSWER 2.4-F      From DOE Order 5500.2B: To off-site agencies within 15 minutes of categorization and in writing in accordance with approved agreements or emergency procedures.  
From DOE Order 5000.3B: To off-site agencies within 15 minutes of categorization (if DOE Order 5500.2B is invoked for an emergency) and in writing within 80 hours.

DOE Order 5500.2B takes precedence. Consult your local SME for further interpretation.

EXERCISE 2.4-G      How is support from national response organizations elicited?

ANSWER 2.4-G      The facility/site must call their local DOE field office EOC and request specific assistance.



EXERCISE 2.4-H      What are the circumstances under which follow-up (emergency) notification to DOE is required of the facility/site?

ANSWER 2.4-H      1. Further degradation of the level of facility safety or worsening conditions  
2. Change in one emergency class or category to another  
3. Termination of an emergency

EXERCISE 2.4-I      What are the typical contents of the written reports of the emergency that are submitted to DOE?

ANSWER 2.4-I      1. Significance, nature, and extent of the event/condition  
2. Cause (including the root cause, if known)  
3. Immediate actions, recovery actions, or corrective actions (if root cause known)

EXERCISE 2.4-J      (a) Compare the notification requirements for a CERCLA-reportable release with those requirements of a DOE emergency; (b) determine which would take precedence in a DOE emergency involving a spill or release of a CERCLA-reportable hazard.

ANSWER 2.4-J      (a) For CERCLA, call the National Response Center within 24 hours (§302.6); for a DOE emergency, call DOE HQ within 15 minutes; (b) the DOE requirement.



**Competency 2.5** Emergency management personnel shall demonstrate a working level knowledge of the notification and reporting requirements in Department of Energy (DOE) Order 5000.3, Occurrence Reporting and Processing of Operations Information.

**1. Supporting Knowledge and Skills**

- a. Define “reportable occurrence” and the rationale associated with reporting as identified in DOE Order 5000.3, Occurrence Reporting and Processing of Operations Information.
- b. Using an actual facility-specific occurrence report, discuss the factors that contributed to the occurrence.
- c. Using the Requirements Section of DOE Order 5000.3, Occurrence Reporting and Processing of Operations Information, describe the intent and contents of the following for notification reports:
  - Analysis
  - Categorization
  - Closeout
  - Corrective action implementation
  - Generic implications
  - Identification
  - Notification process
  - Reporting philosophy
  - Reporting requirements
  - Root cause determination
  - Tracking
- d. Explain the responsibilities of the emergency management personnel and Management and Operating (M&O) contractors for occurrence reporting, including a discussion of the following:
  - Notification report
  - 10-day occurrence report
  - Final report
  - Closing out and verifying occurrence reports
  - Processing occurrence reports which cross lines of emergency management responsibility
  - Contractor occurrence reporting procedures



- e. Explain the conceptual differences and relationship between “occurrence reporting” and “notification” as contained in DOE Order 5000.3, Occurrence Reporting and Processing of Operations Information, and DOE Order 5500.2, Emergency Categories, Classes, and Notification and Reporting Requirements.

## 2. Self-Study Activities (corresponding to the intent of the above competency)

- NOTES:
- The DOE Orders are in a state of transition. Please refer to the following gopher site for a cross reference of new and old Orders:  
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**Read** DOE Order 5000.3B, *Occurrence Reporting and Processing of Operations Information*.

- EXERCISE 2.5-A Define “Reportable Occurrence” and the rationale associated with reporting as identified in DOE Order 5000.3B, *Occurrence Reporting and Processing of Operations Information*.
- EXERCISE 2.5-B Referring to DOE Order 5000.3B, describe three categories of Reportable Occurrences and provide an example of the types of events that could lead to each.
- EXERCISE 2.5-C Discuss time requirements for reporting occurrences.
- EXERCISE 2.5-D Describe the elements of the occurrence report.
- EXERCISE 2.5-E Briefly explain the main purpose of the Occurrence Reporting and Processing System (ORPS).



- EXERCISE 2.5-F      Using Attachment I of DOE Order 5000.3B, list the nine groups of categorized occurrences.
- EXERCISE 2.5-G      Differentiate between “direct cause,” “contributing cause,” and “root cause.”
- EXERCISE 2.5-H      List seven categories of causes.
- EXERCISE 2.5-I      Describe the responsibilities of the Facility Manager for occurrence categorization and reporting.
- EXERCISE 2.5-J      Explain the conceptual differences and relationship between occurrence reporting and notification as contained in DOE Order 5000.3B, *Occurrence Reporting and Processing of Operations Information*, and in DOE Order 5500.2, *Emergency Categories, Classes, and Notification and Reporting Requirements*.

### **3. Summary**

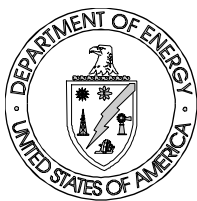
DOE Order 5000.3B, *Occurrence Reporting and Processing of Operations Information*, establishes a system for reporting of operations information related to DOE-owned or -operated facilities and processing of that information to provide for appropriate corrective action.

The Order describes the requirements for reporting and processing of occurrences related to the operation of DOE-owned or -operated facilities, including occurrences related to safety, health, security, property, operations, or the environment, up to and including emergencies.

### **4. Exercise Solutions**

EXERCISE 2.5-A      Define “Reportable Occurrence” and the rationale associated with reporting as identified in DOE Order 5000.3B, *Occurrence Reporting and Processing of Operations Information*.

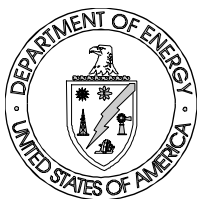
ANSWER 2.5-A      Reportable Occurrences are events or conditions that (1) affect the health and safety of the public, (2) seriously impact the intended purpose of DOE facilities, (3) have a noticeable adverse effect on the environment, (4) endanger the health and safety of workers, or (5) adversely affect national security or the security interests of DOE.



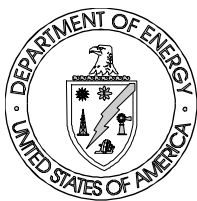
**EXERCISE 2.5-B** Referring to DOE Order 5000.3B, describe three categories of Reportable Occurrences and provide an example of the types of events that could lead to each.

**ANSWER 2.5-B**

Reportable Occurrences		
Type of Occurrence	Description	Examples of Events That Could Lead to the Occurrence
Emergencies	The most serious occurrences; require an increased Alert status for on-site personnel and, in specified cases, for off-site authorities.	<ul style="list-style-type: none"><li>any unintentional nuclear criticality that results or could result in actual or potential facility damage or release of radioactive material to the environment</li><li>any actual or potential release of material to the environment that results or could result in significant off-site consequences</li><li>any natural or man-made event posing an actual or potential threat to the integrity of the facility that results or could result in significant off-site consequences</li><li>any event in process or having occurred that involves an actual or potential substantial degradation of the level of the safety of the facility that results or could result in significant off-site consequences</li><li>any safeguards or security event that is an actual or potential threat to DOE operations, facilities, or personnel, and results or could result in significant effects on the public health and safety/or on national security</li><li>any event that requires activation of the site emergency plan</li></ul>



Reportable Occurrences		
Type of Occurrence	Description	Examples of Events That Could Lead to the Occurrence
Unusual Occurrence	A nonemergency event that has significant impact or potential for impact on safety, the environment, health, security, or operations.	<ul style="list-style-type: none"> <li>result in the release of radioactive or hazardous materials above limits established in, or in violation of, safety, environmental, or health requirements defined in Federal permits, Federal regulations, or DOE standards</li> <li>present significant internal or external threats to safety, the environment, health protection, or the ability of a facility to operate</li> <li>involve significant degradation of safety class equipment or environmental, safety, security, or health conditions</li> <li>result in fatalities, exposures to hazardous or radioactive materials or off-site or on-site contamination that do not meet emergency criteria defined in DOE Order 5500.2B, but are in excess of regulatory limits, failure of environmental monitoring equipment necessary to demonstrate compliance, failure of safety equipment or systems reducing the capability below a minimum required safety function, or significant delay or cost in operations</li> <li>result in the actuation of emergency systems or engineered safety features, except under approved testing</li> <li>violate technical safety requirements, or involve an unreviewed safety question</li> <li>violate DOE safety requirements, environmental requirements, or result in the loss of control or release of radioactive material above allowable limits</li> <li>result in the release of a hazardous substance or material that exceeds a reportable quantity and is not Federally permitted as defined in Attachment I of DOE Order 5000.3B</li> <li>result in failure or significant degradation of administrative controls that are required to ensure safety, security, or environmental protection.</li> </ul>



Reportable Occurrences		
Type of Occurrence	Description	Examples of Events That Could Lead to the Occurrence
Off-Normal Occurrence	An abnormal or unplanned event or condition that adversely affects, potentially affects, or is indicative of degradation in the safety, security, environmental, or health protection performance or operation of a facility.	<ul style="list-style-type: none"><li>• result in the release of radioactive or hazardous materials below limits established by Federal permits, Federal regulations, or DOE standards, but must be reported in writing to state or local agencies in other than routine monthly/quarterly reports</li><li>• are internal or external threats to safety, security, environmental, or health protection or the ability of a facility to operate</li><li>• involve degradation of environmental, safety, security, or health conditions</li><li>• result in serious personnel injury or significant lost workdays, personnel contamination, assimilation, exposure, or significant on-site or off-site contamination of hazardous or radioactive materials in excess of administrative limits but within regulatory limits, or degradation of environmental monitoring equipment necessary to demonstrate compliance</li><li>• result in violation of safety, environmental, or health administrative limits</li><li>• involve operational procedural violations, including maintenance and administrative procedures that have the potential to impact the safety, security, environmental, or health performance or operation of a facility</li><li>• involve discovery of a condition that could prevent the functioning of administrative controls necessary to ensure safety or environmental protection</li></ul>





EXERCISE 2.5-C Describe the notification requirements for Reportable Occurrences.

ANSWER 2.5-C Emergencies - Oral notification to DOE and off-site authorities of emergencies shall be made within 15 minutes or less of categorization; a written notification report shall be prepared and submitted as soon as practical, but in all cases, before the close of the next business day from the time of categorization.

Unusual Occurrences - Oral notification to DOE shall be made as soon as sufficient information is obtained to indicate the general nature and extent of the occurrence, but in all cases, within two hours of categorization; a notification report shall be prepared and submitted before the close of the next business day from the time of categorization.

Off-Normal Occurrences - Oral notification to DOE is not mandatory; a notification report shall be prepared and submitted before the close of the next business day from the time of categorization.

EXERCISE 2.5-D Describe the required elements of the occurrence report.

ANSWER 2.5-D For every Reportable Occurrence, the Facility Manager shall determine and document the following in the occurrence report:

- a) the significance, nature, and extent of the event or condition;
- b) the cause(s) of the event or condition, including the root cause, as appropriate; and
- c) the corrective actions to be taken to correct the condition and prevent recurrence.

EXERCISE 2.5-E Briefly explain the main purpose of the ORPS.

ANSWER 2.5-E The major purpose of the ORPS is to provide feedback of safety and operational information identified in occurrence reports to other DOE nuclear facilities.



EXERCISE 2.5-F      Using Attachment I of DOE Order 5000.3B, list the nine groups of categorized occurrences.

ANSWER 2.5-F      The nine groups of categorized occurrences are:

1. Facility Condition
2. Environmental
3. Personnel Safety
4. Personnel Radiation Protection
5. Safeguards and Security
6. Transportation
7. Value Basis Reporting
8. Facility Status
9. Cross-Category Items

EXERCISE 2.5-G      Differentiate between “direct cause,” “contributing cause,” and “root cause.”

ANSWER 2.5-G      Direct cause - The cause that directly resulted in the occurrence.

Contributing cause - A cause that contributed to the occurrence but, by itself, would not have caused the occurrence.

Root cause - The cause that, if corrected, would prevent recurrence of this and similar occurrences.

EXERCISE 2.5-H      List seven categories of causes.

ANSWER 2.5-H      Categories of causes:

1. Equipment/material problem
2. Procedure problem
3. Personnel error
4. Design problem
5. Training deficiency
6. Management problem
7. External phenomenon



EXERCISE 2.5-I Identify the responsibilities of the Facility Manager in occurrence categorization and notification.

ANSWER 2.5-I Responsibilities of the Facility Manager in occurrence categorization and notification include the following:

- Categorization of the occurrence utilizing the facility-specific procedures developed in accordance with DOE Order 5000.3B.
- For oral notification, the Facility Manager shall simultaneously contact the DOE Facility Representative and the HQ EOC
- Preparation and submittal of the notification report and distribution of the report to the DOE Facility Representative and Program Manager

EXERCISE 2.5-J Explain the conceptual differences and relationship between “occurrence reporting” and “notification” as contained in DOE Order 5000.3B, *Occurrence Reporting and Processing of Operations Information*, and DOE Order 5500.2B, *Emergency Categories, Classes, and Notification and Reporting Requirements*.

ANSWER 2.5-J The purpose of occurrence reporting under DOE Order 5000.3B is to document events and to provide for appropriate corrective action. The purpose of reporting under 5500.2B is to ensure that appropriate response actions can be undertaken and that appropriate resources are available to mitigate the emergency.

DOE Order 5000.3B provides requirements for reporting event occurrences. Reportable events are categorized as Off-Normal Occurrences, Unusual Occurrences, and Emergencies. Once an event has been categorized under 5000.3B, oral notification to HQ and off-site agencies must be made within 2 hours of categorization for an Unusual Occurrence and within 15 minutes for an Emergency; written notification is required within 80 hours of the categorization.

If an event is categorized as an Emergency, it is further classified as an Alert, Site Area, or General Emergency by 5500.2B, and oral notification is required within 15 minutes of declaration of the emergency.

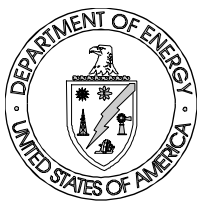


**Competency 2.6** Emergency Management personnel shall demonstrate a working level knowledge of the following guidance documents sufficient to apply the guidance to emergency management activities.

- **Emergency Management Guides (EMGs)**
- **Emergency Response Planning Guidelines (ERPGs)**
- **Protective Action Guide (PAG)**

### **1. Supporting Knowledge and Skills**

- a. Discuss the topic associated with each of the Emergency Management Guides including implementation policies and methodologies.
- b. Discuss the development and implementation of Emergency Response Planning Guidelines and alternatives to use where they do not exist.
- c. Discuss the relationship between the Emergency Response Planning Guidelines and the Protective Action Guide associated with radiological exposure.
- d. Using the Hazard Assessment Guide (HAG), discuss the screening process including the screening thresholds for extremely hazardous, hazardous, and radiological materials.
- e. Discuss the philosophy of Emergency Action Levels (EALs) both symptomatic and event based as discussed in the DOE Order 5500.3, Planning and Preparedness for Operational Emergencies, and the Emergency Management Guides.
- f. Discuss the basis for determining the event classification using Emergency Action Levels and potential consequences using the Hazard Assessment Guide.
- g. Using DOE Order 5500.3 Planning and Preparedness for Operational Emergencies, and the Emergency Management Guides dealing with public information, discuss the responsibilities of each of the listed positions in the public information organization.
- h. Using the DOE Order 5500.3, Planning and Preparedness for Operational Emergencies, and the Emergency Management Guides, discuss the definitions and uses of drills and exercises. Discuss the role of players, controllers, and evaluators with respect to conduct and safety.
- i. Discuss the bounds and limitations of free play in regard to a drill or exercise.



- j. Discuss the responsibilities for safety during a drill/exercise. Explain how safety is built into a drill/exercise and how it is maintained during performance.
- k. Discuss protective actions and their effectiveness with regard to hazards and events.
- l. Discuss protective action recommendations with regard to general public implementation.
- m. Discuss the hazard characterization process as identified in the Hazard Assessment Guide.

## 2. Self-Study Activities (corresponding to the intent of the above competency)

- NOTES:
- The DOE Orders are in a state of transition. Please refer to the following gopher site for a cross reference of new and old Orders:  
gopher://VM1.HQADMIN.DOE.GOV:70/00/doemenu1/directiv/251cross.asc
  - Below are two web sites containing many of the references you may need.

Web Sites		
Organization	Site Location	Notes
Department of Energy	<a href="http://cted.inel.gov/cted/index.html">http://cted.inel.gov/cted/index.html</a>	DOE Standards, Guides, and Orders.
U.S. House of Representatives	<a href="http://law.house.gov/cfr.htm">http://law.house.gov/cfr.htm</a>	Searchable Code of Federal Regulations

**Read** the DOE Emergency Management Guide *Emergency Operations*, “Introduction,” pages 1 through 6.

EXERCISE 2.6-A Briefly describe the guidance documents found in the Emergency Operations Management Guide.

**Read** the DOE Emergency Management Guide *Protective Actions*, pages 5 through 7.

EXERCISE 2.6-B What is the PAG? What government organizations publish the PAGs?

EXERCISE 2.6-C What are Emergency Response Planning Guidelines?

EXERCISE 2.6-D What is the relationship between PAGs and ERPGs?



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**Read** the DOE Emergency Management Guide, *Hazard Assessment*, pages 7 through 9 and 24.

EXERCISE 2.6-E      Using the HAG, discuss the screening process and screening thresholds.

EXERCISE 2.6-F      Using the HAG, what are the main factors considered for determining the event classification?

**Read** the Emergency Management Guide, *Public Information*, pages 2 through 3.

EXERCISE 2.6-G      Using the public information guide, identify the responsibilities of each position within the public information organization.

**Read** the Emergency Management Guide, *Event Classification and Emergency Action Levels*, page 3.

EXERCISE 2.6-H      Using the Emergency Management Guide *Event Classification and Emergency Actions*, discuss the reasoning behind the implementation of emergency action levels (EALs).

**Read** the Emergency Management Guide, *Drills and Exercises*, pages 3, 9, and 10 and 17 and 18.

EXERCISE 2.6-I      Using the DOE Emergency Management Guide *Drills and Exercises*, compare and contrast the uses of drills and exercises.

EXERCISE 2.6-J      Using the DOE Emergency Management Guide *Drills and Exercises*, discuss the role of players, controllers, and evaluators with respect to conduct and safety.

EXERCISE 2.6-K      What are the bounds and limitations of free play with regard to an emergency management drill or exercise?

EXERCISE 2.6-L      Discuss the concept of safety with regard to emergency management drills and exercises.

**Read** the Emergency Management Guide, *Protective Actions*, pages 2 and 3.

EXERCISE 2.6-M      What is meant by protective actions?

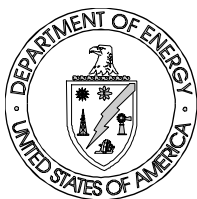


**EXERCISE 2.6-N** Using the PAG, list the 12 protective actions identified by the World Health Organization (WHO) and the International Commission on Radiological Protection (ICRP). Which three of these should be included in emergency management plans for facilities with potential releases of hazardous materials?

### **3. Summary**

The Emergency Management Guide provides guidance for the implementation of the requirements of the DOE EMS. The guide is organized on a modular basis. The guidance contained in each of the modules in the document is generic in nature. Each module covers a separate area with direct application to the EMS. These areas are as follows:

- Program Administration
- Standard Format and Content of Emergency Plans
- Emergency Response Organization
- Offsite Response Interfaces
- Notifications
- Medical Support
- Public Information
- Emergency Facilities and Equipment
- Hazard Assessment
- Operational Emergency Event Classes
- Consequence Assessment
- Protective Actions
- Recovery and Reentry
- Drills and Exercises
- Training
- Emergency Readiness Assurance Plan (ERAP)
- Appraisal Criteria
- Emergency Exercise Evaluation Criteria
- Emergency Readiness Deployment Evaluations (ERDEs)



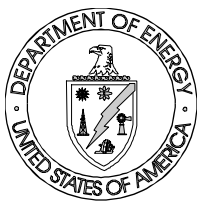
#### 4. Exercise Solutions

EXERCISE 2.6-A Briefly describe the guidance documents found in the *Emergency Operations Management Guide*.

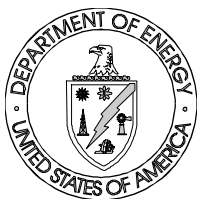
ANSWER 2.6-A

Guidance Documents Found in the <i>Emergency Operations Management Guide</i>	
Guide	Content
Program Administration	Overall establishment and maintenance of the emergency management program and management responsibilities.
Standard Format and Content of Emergency Plans	Describes the standard format that should be used when developing emergency plans and discusses the details of the emergency management program elements identified in DOE Order 5500.3A that should be included in emergency plans.
Emergency Response Organization	Describes the organizational element with clearly specified authorities and responsibilities for emergency response and mitigation that should be established and maintained for each facility/site.
Offsite Response Interfaces	Describes the provisions that should be in place for interface and coordination with Federal, state, tribal, and local agencies and organizations responsible for off-site emergency response and for protection of the environment and health and safety of the public.
Notification	Describes the notification and communication of emergency information, which should be consistent with the requirements of DOE Orders 5000.3B and 5500.2B.
Medical Support	Describes the provisions that should be in place for medical support for workers, including those with radiological and/or hazardous material contamination.
Public Information	Describes an emergency public information program, consistent with DOE Order 5500.4A, which should be established and integrated into the emergency management program.
Emergency Facilities and Equipment	Describes the facilities, equipment, and supplies that should be established and maintained for adequate emergency response support.





Guidance Documents Found in the <i>Emergency Operations Management Guide</i>	
Guide	Content
Hazard Assessment	Covers the preparation and use of the hazards assessment, which is critical to any full-spectrum emergency management program, as well as a discussion of the development of emergency planning zones (EPZs).
Operational Emergency Event Classes	Describes the process by which operational emergencies involving or affecting DOE facilities are characterized as one of the Operational emergency classes (e.g., Alert, Site Area Emergency, or general Emergency) in accordance with DOE Order 5500.2B. It also describes the emergency action levels (EALs), the specific criteria used to recognize and categorize events, which should be developed for the spectrum of potential operational emergencies identified by the hazards assessment.
Consequence Assessment	Describes the provisions that should be in place to adequately assess the actual or potential onsite and off-site consequences of an emergency.
Protective Actions	Describes the provisions that should be in place for specific, predetermined actions to be taken in response to emergency conditions to protect on-site personnel and the public.
Recovery and Reentry	Describes the provisions that should be made for recovery from an operational emergency and reentry into the affected area.
Drills and Exercises	Describes the coordinated program of drills and exercises that should be an integral part of the emergency management program.
Training	Describes the general training that should be provided to all workers regarding operational emergencies, and specialized training that should be conducted for all workers and be available to all regional, Federal, state, tribal, and local emergency response organizations.
Emergency Readiness Assurance Plan (ERAP)	Discusses the five-year plans that are developed to ensure that emergency plans, implementing procedures, and resources are adequate and sufficiently maintained, exercised, and evaluated.



Guidance Documents Found in the <i>Emergency Operations Management Guide</i>	
Guide	Content
Appraisal Criteria	Discusses the program used to ensure that stated emergency capabilities are sufficient to implement emergency plans, and that timely improvements are made in response to needs identified through coordinated emergency planning, resource allocation, training, drills, exercises, and evaluations.
Emergency Exercise Evaluation Criteria	Contains the standards and criteria used by the DEO using oversight appraisals of emergency exercises conducted by DOE sites and facilities.
Emergency Readiness Deployment Evaluations (ERDEs)	Contains the standards and criteria used by the Deputy Assistant Secretary for Military Applications (DASMA) and the DEO during evaluations of the ability of DOE national response assets to deploy to an incident site and carry out the responsibilities of the assets.

EXERCISE 2.6-B      What is the PAG? What government organizations publish the PAG?

ANSWER 2.6-B      The term “PAG” stands for Protective Action Guide. PAGs published by the U.S. Environmental Protection Agency (EPA) are to be used for comparison with exposures resulting from radiological releases to determine the appropriate emergency class. PAGs published by the U.S. Food and Drug Administration (FDA) are used for ingestion pathway planning purposes.

EXERCISE 2.6-C      What are Emergency Response Planning Guidelines?

ANSWER 2.6-C      Emergency Response Planning Guidelines (ERPGs) are developed and approved by the American Industrial Hygiene Association (AIHA) and are used for comparison with exposures resulting from nonradiological releases to determine the appropriate emergency class.



EXERCISE 2.6-D      What is the relationship between PAGs and ERPGs?

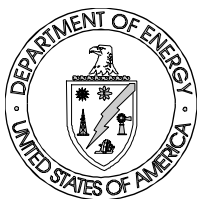
ANSWER 2.6-D      PAGs are applied to radiological releases. ERPGs are applied to nonradiological releases.

EXERCISE 2.6-E      Using the HAG, discuss the screening process and screening thresholds.

ANSWER 2.6-E      The objective of the screening process is to identify hazards that are significant enough to warrant consideration in a facility's emergency management program.

1. The Emergency Planning and Community Right-to-Know Act (EPCRA) requires that inventories of extremely hazardous substances, hazardous substances, and toxic chemicals, as defined by the EPA, be developed and maintained for each facility, and that those inventories be reported annually to local emergency planning authorities. This annual inventory must include all materials exceeding the threshold planning quantities (TPQs), or applicable state regulations if more restrictive.
2. Safety analysis reports (SARs), operational safety requirements (OSRs), and subordinate facility operating procedures and limits will be the source of inventory information on most radioactive and some nonradioactive hazardous materials. Material control and accountability (MC&A) records should be a primary source of information on current holdings and authorized limits for special nuclear material (SNM).
3. For those facilities having a documented vulnerability analysis, as required by DOE Order 5630.11, the identified targets that are also hazardous materials (e.g., radioactive materials at risk from theft, diversion, or sabotage) should be included in the list of facility hazards.

Screening thresholds or screening quantities should be used to eliminate the needs to analyze insignificant hazards.



## Section 2.0

**EXERCISE 2.6-F** Using the HAG, what are the main factors considered for determining the event classification?

**ANSWER 2.6-F** The following are considered for determining the event classification:

- The correlation of the facility event scenarios and estimated consequences
- Observable indications, such as EALs
- Protective actions that are appropriate to the scenarios

**EXERCISE 2.6-G** Using the public information guide, identify the responsibilities of each position within the public information organization.

**ANSWER 2.6-G**

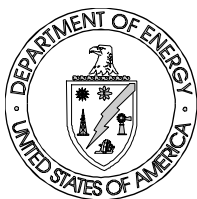
Public Information Organization Position Roles	
Position	Description
Spokesperson	Briefs the news media and/or public on response and recovery activities and emergency status. The spokesperson should be someone at the executive level who is a credible source of information. This position is usually recognized as a spokesperson for the entire DOE/contractor/facility.
Joint Information Center (JIC) Director	Commands and controls the JIC, introduces the spokesperson, announces when briefings will be held, ensures a timely schedule between briefings, and opens and closes briefings.
News Director	Supervises preparation, approval, and dissemination of news releases and status reports, ensures follow-up to media inquiries, and works with the broadcast and print media to determine and assist their needs.
News Release Writers	Gather established information on the circumstances of the event, prepare news release(s), and obtain the appropriate approvals for news releases.
Public Inquiry/Rumor Control Supervisor	Checks unusual inquiries or rumors that should be addressed, and ensures that the news media are monitored for rumors and/or erroneous information for further research and correction.



Public Information Organization Position Roles	
Position	Description
Technical Consultant/Technical Briefer	Establishes and ensures DOE/contractor/site speaker credibility. The briefer should provide background information to the media; information on radiological, chemical, and other hazards; and operational implications of the incident.
Administrative Support Advisor	Ensures that adequate clerical support is available, that technical support problems are rectified, and that logistical support is properly managed.
Governmental Liaison	Establishes contact with government Public Information Officers and describes circumstances, facility operations, and emergency procedures. The Liaison also establishes appropriate communications with the DOE HQ Public Affairs Office; coordinates government news releases and other information based on information provided by the state, tribal, and local Public Information Officers; and confirms that coordination of information has occurred.

EXERCISE 2.6-H      Using the Emergency Management Guide *Event Classification and Emergency Action Levels*, discuss the reasoning behind the implementation of emergency action levels (EALs).

ANSWER 2.6-H      Prior experience has demonstrated that effective emergency response depends upon early recognition of indicators which signal the onset of accident events, coupled with the rapid implementation of emergency actions. The system of EALs and event classifications has been created to ensure the rapid recognition of accident indicators and the timely commitment of response resources.



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EXERCISE 2.6-I Using the Emergency Management Guide *Drills and Exercises*, compare and contrast the uses of drills and exercises.

ANSWER 2.6-I Both drills and exercises play important, yet different, roles in developing and maintaining emergency response capabilities.

Comparing and Contrasting Drills and Exercises		
Both drills and exercises . . .	Drills provide . . .	Exercises provide . . .
<ul style="list-style-type: none"><li>• train and test personnel;</li><li>• test procedures and equipment; and</li><li>• identify deficiencies, weaknesses, and improvement items.</li></ul>	“hands-on” instruction sessions for <i>individuals</i> or <i>teams</i> . These sessions develop, test, or maintain a specific operational or emergency response capability.	a comprehensive performance test of the <i>integrated</i> capability of most aspects in the emergency management program associated with the facility.

EXERCISE 2.6-J Using the Emergency Management Guide *Drills and Exercises*, discuss the roles of players, controllers, and evaluators with respect to conduct and safety.

ANSWER 2.6-J

Roles During an Emergency Response Exercise	
Position	Description
Controllers	<ul style="list-style-type: none"><li>• Facilitate the conduct of the exercise by providing scenario information to players</li><li>• Allow freedom of player decisions</li><li>• Preclude player decisions and control actions that may compromise the safety or security of the facility, personnel, or equipment</li></ul>
Evaluators	Observe, evaluate, and document the performance of the players and the activities within their areas of responsibility
Players	Respond during the drill or exercise in accordance with operational procedures and/or emergency plan implementing procedures as if the exercise information is real.



EXERCISE 2.6-K      What are the boundaries and limitations of free play with regard to an emergency management drill or exercise?

ANSWER 2.6-K      Free play is an important element in the management of drills and exercises. Free play is an extension of realism in that the players are generally permitted to make decisions and take actions they consider appropriate to the scenario. The key management aspect of free play is to allow such actions to occur, but to preclude actions by players that would do the following:

- Jeopardize personnel safety
- Jeopardize plant/facility safety
- Impact security
- Exceed established drill/exercise scope or limitations

EXERCISE 2.6-L      Discuss the concept of safety with regard to emergency management drills and exercises.

ANSWER 2.6-L      The safety of personnel and the facility is paramount during drills and exercises. The planning process and the management of drills/exercises must ensure that sufficient precautions and limitations are established and adhered to for the safe conduct of the drill/exercise. A person with the sole responsibility of ensuring safety during the exercise, such as an exercise safety director, should be appointed to the drill/exercise planning group.

During the conduct of a drill/exercise, all participants must comply with standard safety rules and practices. Participants must understand that the safety of participants, nonparticipants, the public, and the environment is of the highest priority. All participants are responsible for the safe conduct of the drill/exercise.

EXERCISE 2.6-M      What is meant by “protective actions?”

ANSWER 2.6-M      DOE Order 5500.1B, Attachment 2, defines protective actions as “physical measures, such as evacuation or sheltering, taken to prevent potential health hazards resulting from a release of hazardous materials to the environment from adversely affecting employees or the offsite population.”



**EXERCISE 2.6-N** Using the Protective Actions Guide, list the 12 protective actions identified by the World Health Organization (WHO) and the International Commission on Radiological Protection (ICRP). Which three of these should be included in emergency management plans for facilities with potential releases of hazardous materials?

**ANSWER 2.6-N**

1. Evacuation
2. Sheltering
3. Decontamination of people
4. Ad hoc respiratory protection
5. Control of access
6. Shielding
7. Radioprotective prophylaxis (e.g., administration of stable iodine)
8. Control of foodstuffs and water
9. Relocation
10. Decontamination of land and equipment
11. Changes in livestock and agricultural practices
12. Medical care

Typically, evacuation, sheltering, and decontamination of people should be provided for in emergency management plans for facilities with potential releases of hazardous materials.





**Competency 2.7** Emergency management personnel shall demonstrate a working level knowledge of the following Federal regulations related to emergency management.

- 10 CFR 835, Occupational Radiation Protection
- 18 CFR 12, Safety of Water Power Projects and Project Works
- 29 CFR 1910.38, Employee Emergency Plans and Fire Prevention Plans
- 29 CFR 1910.94, 96, 134, & 165 Occupational Safety and Health Act (OSHA)
- 29 CFR 1910.120, Hazardous Waste Operations and Emergency Response
- 29 CFR 1910.1200, Hazard Communications
- 40 CFR 262, 264, & 280, Resource Conservation and Recovery Act (RCRA)
- 40 CFR 265, Interim Status Standards for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities
- 49 CFR 172, Hazardous Materials Table, Special Provisions, Hazardous Materials Communication, Emergency Response Information, and Training Requirements
- Superfund Amendments and Reauthorization Act (SARA) Title III
- 40 CFR 350, Trade Secrecy Provisions and Information Disclosure Requirements
- 40 CFR 355, Facility Notification and Release Reporting Requirements
- 40 CFR 370, Hazardous Chemical Inventory Reporting Requirements
- 40 CFR 372, Toxic Release Reporting Requirements
- 40 CFR 300 & 302, Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)
- Hazardous Materials Transportation Uniform Safety Act of 1990 (HMTUSA)
- Clean Air Act Amendments
- Oil Pollution Act
- 40 CFR 112 & 117, Clean Water Act (CWA)

### **1. Supporting Knowledge and Skills**

- a. Discuss the relationship between the requirements of Department of Energy Emergency Management Orders and the above listed Federal Regulations that govern Department operations.
- b. Discuss 18 CFR 12, Subpart C, the Oil Pollution Act of 1990, Section 4202(a)(6) and 40 CFR 300, the National Oil and Hazardous Substances Pollution Contingency Plan.
- c. Discuss 29 CFR 1910.120 and its impact on defense nuclear facility operations and the training and qualification of emergency response personnel.



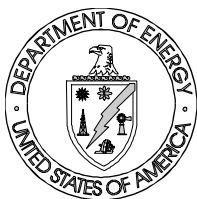
## Section 2.0

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- d. Discuss the transition from emergency response to post emergency response.
- e. Discuss the differences between a Hazardous Materials (HAZMAT) Team and a Fire Brigade as identified in 29 CFR 1910.120, 40 CFR 264, and 40 CFR 265.
- f. Define the roles and responsibilities of the State Emergency Response Commission (SERC) as required by the Superfund Amendments and Reauthorization Act, Title III.
- g. Discuss the off-site notifications required by 40 CFR 302 and 355 as directed in the Emergency Management Guide (EMG) dealing with notifications.
- h. Define the roles and responsibilities of the Local Emergency Planning Committees as required by the Superfund Amendments and Reauthorization Act, Title III.
- i. Specify the required emergency response training for “site workers,” and those who are not “on-site” on a regular basis.
- j. Discuss the similarities and differences of the Emergency Response Plan identified in 29 CFR 1910.120 versus the emergency plan requirements of DOE Order 5500.3, Planning and Preparedness for Operational Emergencies.
- k. Explain the five levels of hazardous materials response as identified in 29 CFR 1910.120.
- l. Discuss the requirements of 40 CFR 264 & 265 with regard to emergency response organizations and its relationship to DOE Order 5500.3, Planning and Preparedness for Operational Emergencies.
- m. Discuss the 40 CFR 264 & 265 requirements with regard to “Contingency Plans” and their relationship to the requirements of DOE Order 5500.3, Planning and Preparedness for Operational Emergencies.

### 2. Self-Study Activities (corresponding to the intent of the above competency)

NOTES: • The DOE Orders are in a state of transition. Please refer to the following gopher site for a cross reference of new and old Orders:  
gopher://VM1.HQADMIN.DOE.GOV:70/00/doemenu1/directiv/251cross.asc



- Below are two web sites containing many of the references you may need.

Web Sites		
Organization	Site Location	Notes
Department of Energy	<a href="http://cted.inel.gov/cted/index.html">http://cted.inel.gov/cted/index.html</a>	DOE Standards, Guides, and Orders.
U.S. House of Representatives	<a href="http://law.house.gov/cfr.htm">http://law.house.gov/cfr.htm</a>	Searchable Code of Federal Regulations

**Scan** each of the following regulations:

- 29 CFR 1910.120, “Hazardous Waste Operations and Emergency Response”
- 29 CFR 1910.1200, “Hazard Communications”
- 40 CFR 262, “Resource Conservation and Recovery Act (RCRA)”
- Superfund Amendments and Reauthorization Act (SARA) Title III
- 40 CFR 355, “Facility Notification and Release Reporting Requirements”
- 40 CFR 300 and 302, “Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)”
- 49 CFR 172, “Hazardous Materials Table, Special Provisions, Hazardous Materials Communication, Emergency Response Information, and Training Requirements”

EXERCISE 2.7-A      Locate and read the scope and application sections of 29 CFR 1910.120 and 1200.

EXERCISE 2.7-B      From 29 CFR 1910.120 (q), list the five levels of emergency responders.

EXERCISE 2.7-C      Locate and read the scope, application, and general organization concepts sections of 40 CFR 300. What are the composition and responsibilities of the National Response Team?

EXERCISE 2.7-D      Using 40 CFR 302, identify the reportable quantities for the hazardous substances dimethyl sulfate, nitric acid, and trichloroethylene.



- EXERCISE 2.7-E (a) What is the order of precedence for the following DOE and Federal regulations and (b) what factor is of primary consideration?
- DOE Order 5000.3B
  - DOE Order 5500.1B
  - DOE Order 5500.3
  - 29 CFR 1910.120
  - 40 CFR 300
- EXERCISE 2.7-F What emergency situation status must exist before initiating post-emergency responses?
- EXERCISE 2.7-G What are the hazardous waste operations and emergency response training requirements for managers and supervisors?
- EXERCISE 2.7-H Locate and read the scope and application sections of the following regulations:
- 10 CFR 835, "Occupational Radiation Protection"
  - 18 CFR 12, "Safety of Water Power Projects and Project Works"
  - 29 CFR 1910.38, "Employee Emergency Plans and Fire Prevention Plans"
  - 29 CFR 1910.94, 96, 134, and 165, "Occupational Safety and Health Act (OSHA)"
  - 40 CFR 265, "Interim Status Standards for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities"
  - 40 CFR 350, "Trade Secrecy Provisions and Information Disclosure Requirements"
  - 40 CFR 355, "Facility Notification and Release Reporting Requirements"
  - 40 CFR 370, "Hazardous Chemical Inventory Reporting Requirements"
  - 40 CFR 372, "Toxic Release Reporting Requirements"
  - Hazardous Materials Transportation Uniform Safety Act of 1990 (HMTUSA)
  - Clean Air Act Amendments
  - Oil Pollution Act
  - 40 CFR 112 and 117, "Clean Water Act (CWA)"



### **3. Summary**

Scan the CFRs listed in the competency. Various regulations exist related to emergency management. An emergency management professional should read, discuss, and apply those regulations on a daily basis.

### **4. Exercise Solutions**

**EXERCISE 2.7-A**      Locate and read the scope and application sections of 29 CFR 1910.120 and 1200.

**ANSWER 2.7-A**      Refer to 29 CFR 1910.120 and 1200.

**EXERCISE 2.7-B**      From 29 CFR 1910.120 (q), list the five levels of emergency responders.

**ANSWER 2.7-B**

1. First responder awareness level
2. First responder operations level
3. Hazardous Materials Technician
4. Hazardous Materials Specialist
5. On-Scene Incident Commander

**EXERCISE 2.7-C**      Locate and read the scope, application, and general organization concepts sections of 40 CFR 300. What are the composition and responsibilities of the National Response Team?

**ANSWER 2.7-C**      The team is responsible for national response and preparedness planning, for coordinating regional planning, and for providing policy guidance and support to the regional response teams. The team consists of representatives from the following agencies: U.S. Coast Guard (co-chair); EPA (chair); Federal Emergency Management Agency (FEMA); Departments of Defense, Energy, Agriculture, Commerce, Health and Human Services, Interior, Justice, Labor, and Transportation; Nuclear Regulatory Commission (NRC); and National Response Center.



EXERCISE 2.7-D Using 40 CFR 302, identify the reportable quantities for the hazardous substances dimethyl sulfate, nitric acid, and trichloroethylene.

ANSWER 2.7-D

dimethyl sulfate -	100 pounds
nitric acid -	1,000 pounds
trichloroethylene -	100 pounds

EXERCISE 2.7-E (a) What is the order of precedence for the following DOE and Federal regulations, and (b) what factor is of primary consideration?

- DOE Order 5000.3B
- DOE Order 5500.1B
- DOE Order 5500.3
- 29 CFR 1910.120
- 40 CFR 300

ANSWER 2.7-E (a)

- 40 CFR 300
- 29 CFR 1910.120
- DOE Order 5500.3
- DOE Order 5500.1B
- DOE Order 5000.3B

(b) “if there is a conflict or overlap, the provision that is more protective of employee safety and health shall apply. . .” (§1910.120).

EXERCISE 2.7-F What emergency situation status must exist before initiating post-emergency responses?

ANSWER 2.7-F The immediate threat of a release has been stabilized or eliminated.

EXERCISE 2.7-G What are the hazardous waste operations and emergency response training requirements for managers and supervisors?

ANSWER 2.7-G Forty hours of initial training (the content to include names of personnel responsible for site safety and health, hazards present on the site, use of personal protective equipment, work practices to minimize risk, safe use of engineering controls and equipment on site, medical surveillance) and three days of supervised field experience (§1910.120(e)(4)).



- EXERCISE 2.7-H      Locate and read the scope and application sections of the following regulations:
- 10 CFR 835, “Occupational Radiation Protection”
  - 18 CFR 12, “Safety of Water Power Projects and Project Works”
  - 29 CFR 1910.38, “Employee Emergency Plans and Fire Prevention Plans”
  - 29 CFR 1910.94, 96, 134, and 165, “Occupational Safety and Health Act (OSHA)”
  - 40 CFR 265, “Interim Status Standards for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities”
  - 40 CFR 350, “Trade Secrecy Provisions and Information Disclosure Requirements”
  - 40 CFR 355, “Facility Notification and Release Reporting Requirements”
  - 40 CFR 370, “Hazardous Chemical Inventory Reporting Requirements”
  - 40 CFR 372, “Toxic Release Reporting Requirements”
  - Hazardous Materials Transportation Uniform Safety Act of 1990 (HMTUSA)
  - Clean Air Act Amendments
  - Oil Pollution Act
  - 40 CFR 112 and 117, “Clean Water Act (CWA)”

ANSWER 2.7-H      Refer to the listed regulations.